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| 09/846,823 | 04/30/2001 | Ted E. Dunning | 22227-04647 | 5884 |

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| EXAMINER | |
|---|---|
| RETTA, YEHDEGA | |
| **ART UNIT** | **PAPER NUMBER** |
| 3622 | |

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. 09/846,823 | Applicant(s) DUNNING ET AL. | |
|---|---|---|---|
| | Examiner Yehdega Retta | Art Unit 3622 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *30 April 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-97* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-97* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5,6,10,12*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

## DETAILED ACTION

### *Specification*

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (example page 55). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-38 and 93-97 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of:

(1) whether the invention is within the technological art; and

(2) whether the invention produces a useful, concrete, and tangible result.

For claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical science as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For the process claim to pass muster, the recited process must somehow apply, involve, use, or advance the technological arts.

Regarding claim 1, the independently claimed steps of accepting selection, generating log, accepting query, scoring the log and determining a result do not require structural interaction or mechanical intervention such that the invention falls within the technological arts permitting statutory patent protection. The claimed step of accepting selection, generating log, accepting query, scoring the log and determining a result does not apply, involve, use or advance the technological arts since all of the recited steps can be performed in the mind of user or by use of a pencil and paper. Claims reciting those steps can be performed by interpersonal communications such that the claimed steps can be performed without a physical structure or mechanical object. The method only constitutes an idea for determining a result based on degree of occurrence.

As the technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or filed of use) or mere implications of employing a machine or article or manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. Nothing in the body of the claim, recites any structure or functionality to suggest that a computer performs the recited steps. Therefore, the preamble is taken to merely recite a field of use

Additionally, for a claimed invention to be statutory the claimed invention must produce a useful, concrete and tangible result. In the present case, the claimed invention produces determining result item based on degree of occurrence (i.e., repeatable) prediction (i.e., useful ant tangible). Although the recited process produces a useful, concrete and tangible result, since

claimed invention, as a whole, is not with the technological art as explained above, the claims are deemed to be directed to non-statutory matter.

Dependent claims are rejected since they are dependent on rejected claim.

Regarding claim 34, the independently claimed steps of determining total number of item group, determining a subset of item group, .... and determining a log likelihood ratio do not require structural interaction or mechanical intervention such that the invention falls within the technological arts permitting statutory patent protection. The claimed step of determining total number of item group, determining a subset of item group, ... and determining a log likelihood ratio does not apply, involve, use or advance the technological arts since all of the recited steps can be performed in the mind of user or by use of a pencil and paper. Claims reciting those steps can be performed by interpersonal communications such that the claimed steps can be performed without a physical structure or mechanical object. The method only constitutes an idea for determining a result based on degree of occurrence.

As the technological arts recited in the preamble, mere recitation in the preamble (i.e., intended or filed of use) or mere implications of employing a machine or article or manufacture to perform some or all of the recited steps does not confer statutory subject matter to an otherwise abstract idea unless there is positive recitation in the claim as a whole to breathe life and meaning into the preamble. Nothing in the body of the claim, recites any structure or functionality to suggest that a computer performs the recited steps. Therefore, the preamble is taken to merely recite a field of use.

Additionally, for a claimed invention to be statutory the claimed invention must produce a useful, concrete and tangible result. In the present case, claim 34 also does not produce (i.e.,

repeatable) prediction (i.e., useful ant tangible). The recited process does not produce a useful, concrete and tangible result, Therefore, the claims are deemed to be directed to non-statutory matter.

Regarding claim 93, for a claimed invention to be statutory the claimed invention must produce a useful, concrete and tangible result. In the present case, claim 39 does not produce (i.e., repeatable) prediction (i.e., useful ant tangible). The recited process does not produce a useful, concrete and tangible result, Therefore, the claims are deemed to be directed to non-statutory matter.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 86 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 86 recites the limitation "wherein the computer-readable code adapted to determine a binomial log likelihood ratio for an item comprises computer readable code adapted to ....". There is no recitation in claim 59 of a code adapted to determine a binomial log likelihood ratio. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

Claims 1, 4-27, 32, 33, 39, 42-59, 62-85, 91 and 92 are rejected under 35 U.S.C. 102(e) as being anticipated by Hosken U.S. Patent No. 6,438,579.

Regarding claim 1, Hosken teaches accepting item selection, generating log containing identifiers for user item selection; accepting query; scoring user logs, responsive to a degree of occurrence to the query item; determining at least one result item in a subset of scored user logs (see abstract, col. 2 line 52 to col. 3 line 34, col. 5 line 8 to col. 6 line 38 and col. 9 lines 23-65)

Regarding claims 4-11, Hosken teaches video track or music track, generating track list containing an identifier for each determined result. Hosken teaches recommending music and video and other media content items based on similarity in profile between the user and other users (see abstract and col. 11 line 1 to col. 13 line 30 and col. 14 line 40 to col. 16 line 21).

Regarding claims 12 and 13, Hosken teaches accepting selection; input specifying an item purchase by user, provided via web page (see col. 3 lines 17-34, col. 4 lines 11-55, col. 5 lines 20-62).

Regarding claim 14, Hosken teaches defining a subset of the scored user logs (see col. 15 line 10 to col. 16 line 21).

Regarding claims 15-27, Hosken teaches monitoring user behavior and adjusting the user log ... outputting advertisement ...(see col. 5 line 20 to col. 6 line 67 and col. 8 line 38 to col. 11 line 19).

Regarding claims 32 and 33, Hosken teaches deleting item selected by user from the determining at least one result, ranking the result responsive to the degree of significance (see col. 16 lines 24-53).

Claims 39 and 59 are rejected as stated above in claim 1.

Claims 42-45 and 62-69 are rejected as stated above in claims 4-11.

Claims 70 and 71 are rejected as stated above in claims 12 and 13.

Claim 72 is rejected as stated above in claim 14.

Claims 46-58 and 73-85 are rejected as stated above in claims 15-27.

Claims 91 and 92 are rejected as stated above in claims 32 and 33.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2,3, 28-31, 34-38, 40, 41, 60, 61, 86-90, 93-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosken U.s. Patent No. 6,438,579 further in view of Lazarus U.S. Patent No. 6,430,539.

Regarding claims 2, 3, 40, 41,60, 61 and 86 Hosken does not explicitly teach significance of occurrence being determined by a log of likelihood ratio analysis or a substantial equivalent of a log of likelihood ratio analysis, it is taught by Lazarus (see col. 22 line 19 to col. 25 line 53). Lazarus teaches use a log of likelihood ratio or an equivalent analysis to determine significance of occurrence (see abstract, col. 4 lines 24-67 and col. 39 lines 13-53). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use Lazarus's predictive model in Hosken's recommendation system since a log of likelihood ratio or equivalent ratio analysis overcomes the problem of small count situations and have much better small count behavior while at the same time retaining the same behavior in the non-small count regions as taught by Lazarus (see col. 24 line 44 to col. 25 line 38).

Regarding claims 28-31, 34-38, 87-90, 93-97, Hosken teaches determining a total number of users, determining a subset of user, determining the items selected or not selected by the subsets and use of correlation algorithm to determine the correlation between the cluster and the user (see col. 15 line 10 to col. 16 line 21). However Hosken failed to explicitly teach the correlation algorithm as a log likelihood ratio, it is disclosed in Lazarus (see abstract, col. 4 lines 24-67 and col. 39 lines 13-53). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use Lazarus's predictive model in Hosken's recommendation system since a log of likelihood ratio or equivalent ratio analysis overcomes the problem of small count situations and have much better small count behavior while at the same time retaining the same behavior in the non-small count regions as taught by Lazarus (see col. 24 line 44 to col. 25 line 38).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lazarus U.S. Patent No. 6,134,532 teaches optimal adaptive matching of users to most relevant entity and information in real-time using a log likelihood ratio.

Eder U.S. Patent No. 6,321,205 teaches modeling and analyzing business improvement program and generating a list of recommendation.

Hill U.S. Patent No. 5,713,016 teaches determining relevance using a log likelihood ratio.

Ward U.S. Patent No. 6,526,411 teaches creating dynamic playlists and recommendation system.

U.S. Patent No. 6,370,513 teaches automated selection organization and recommendation using user preference vector.

Weare U.S. Patent No. 6,657,117 teaches providing automatic classification of media entities by utilizing classification chain techniques that test distance between media entities.

Horvitz et al. U.S. Patent No. 6,655,963 teaches predicting and selectively collecting preferences based on personality diagnosis.

Behrens U.S. Patent No. 6,615,208 teaches automatic recommendation of products using latent semantic indexing of content.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yehdega Retta whose telephone number is (703) 305-0436. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber can be reached on (703) 305-8469. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9326.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

Yehdega Retta

Yehdega Retta
Examiner
Art Unit 3622

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